



US009636547B2

(12) **United States Patent**
Watanabe et al.

(10) **Patent No.:** **US 9,636,547 B2**
(45) **Date of Patent:** **May 2, 2017**

(54) **MULTI-PIECE SOLID GOLF BALL**

(56) **References Cited**

(71) Applicant: **BRIDGESTONE SPORTS CO., LTD.**,
Minato-ku, Tokyo (JP)

U.S. PATENT DOCUMENTS

(72) Inventors: **Hideo Watanabe**, Saitamaken (JP);
Akira Kimura, Saitamaken (JP)

5,782,707	A	7/1998	Yamagishi et al.
6,592,470	B2	7/2003	Watanabe et al.
6,663,507	B1	12/2003	Watanabe et al.
6,702,695	B1	3/2004	Higuchi et al.
6,723,008	B2	4/2004	Higuchi et al.
6,739,986	B2	5/2004	Higuchi et al.
6,746,345	B2	6/2004	Higuchi et al.
6,814,676	B2	11/2004	Watanabe et al.
6,846,250	B2	1/2005	Higuchi et al.

(73) Assignee: **Bridgestone Sports Co., Ltd.**, Tokyo
(JP)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 20 days.

(Continued)

FOREIGN PATENT DOCUMENTS

(21) Appl. No.: **14/873,370**

JP	9-239068	A	9/1997
JP	2001-54588	A	2/2001

(22) Filed: **Oct. 2, 2015**

(Continued)

(65) **Prior Publication Data**

US 2016/0175660 A1 Jun. 23, 2016

Primary Examiner — Raeann Gorden

(74) *Attorney, Agent, or Firm* — Sughrue Mion, PLLC

(30) **Foreign Application Priority Data**

Dec. 17, 2014 (JP) 2014-255269

(57) **ABSTRACT**

(51) **Int. Cl.**

A63B 37/06 (2006.01)

A63B 37/00 (2006.01)

(52) **U.S. Cl.**

CPC **A63B 37/0075** (2013.01); **A63B 37/0063**
(2013.01); **A63B 37/0065** (2013.01); **A63B**
37/0081 (2013.01); **A63B 37/0084** (2013.01);
A63B 37/0092 (2013.01); **A63B 37/0033**
(2013.01); **A63B 37/0043** (2013.01); **A63B**
37/0045 (2013.01); **A63B 37/0062** (2013.01);
A63B 37/0068 (2013.01)

(58) **Field of Classification Search**

CPC **A63B 37/0063**

USPC **473/370**

See application file for complete search history.

In a multi-piece solid golf ball having a core, a cover and an intermediate layer therebetween, the core, an intermediate layer-encased sphere and the ball have surface hardnesses which satisfy a specific relationship, and the intermediate layer and the cover have thicknesses which satisfy a specific relationship. Also, the core has a hardness profile in which the hardnesses at the core surface, core center, a position 5 mm from the core center, and a position midway between the surface and center of the core satisfy specific relationships. This golf ball, when used by mid- and high-level amateurs, enables the golfer to maintain an adequate distance on shots with a driver and achieve a good distance on iron shots, has a good spin performance on approach shots and has a good feel on impact. In addition, the ball has an excellent scuff resistance when struck with a grooved wedge.

7 Claims, 1 Drawing Sheet

